

Atrial standstill in a horse with cardiac glycoside intoxication

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Introduction

Atrial standstill is described in human and veterinary medicine. Among causes are atrial myocarditis, hyperkalaemia, digitalis glycosides or it can be hereditary.

Aim of the study

To describe atrial standstill in a horse due to cardiac glycosides intoxication.

Materials and Methods

A 6-year-old horse was presented with symptoms of weakness, sweating and trembling.

A general clinical examination, ultrasonography of lungs, abdomen and heart, continuous electrocardiography and repeated blood exams were performed. Treatment was initiated.

Results

The horse had an increased temperature (38.9°C) and respiration rate. Ultrasound of thorax and abdomen revealed no abnormalities. An irregular heart rhythm was present. Electrocardiography showed periods of atrial premature beats, atrial tachycardia, atrial flutter and atrial stand still with a sinoventricular rhythm. Blood exams revealed a PCV of 60%, a potassium of 4.6mmol/l and a digoxin concentration of 0.35ng/ml. The horse received perfusions, glucoses, antibiotics and anti-inflammatory drugs. Six hours later, the general status deteriorated with potassium rising to 8.9mmol/l, ureum to 15.8mmol/l, creatinine to 10.3µg/dL, and digoxin to 6.7ng/mL. At this time left ventricular fractional shortening was $\pm 50\%$ and tissue Doppler imaging showed a complete loss of atrial activity. Extra perfusions of glucoses, insulin and diuretics decreased the potassium to 6.0mmol/L. As atrial flutter with tachycardia appeared, lidocaine was administered until heart rate decreased. Thirty two hours later, the horse became recumbent and excited extremely and was euthanized.

Conclusion

To our knowledge this abstract describes the first case of atrial standstill in a horse due to hyperkalemia caused by digitalis intoxication.